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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/085,499	02/27/2002	Raymond Andrew Saksa	PU010044	8703

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EXAMINER

BRINEY III, WALTER F

ART UNIT	PAPER NUMBER
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2644

DATE MAILED: 03/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/085,499

Applicant(s)

SAKSA ET AL.

Examiner

Walter F Briney III

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-25, 27-32 and 34-39 is/are rejected.
- 7) ☒ Claim(s) 26 and 33 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 24 November 2004 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. **Claims 21, 22, 25, 27-30, 34, 35, 38, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baumbach (US Patent 4,314,304) in view of Elder, Jr. (US Patent 5,392,349) and further in view of Chandran (US Patent 6,480,604).**

Claim 21 is limited to a *telephony protection device*. Baumbach discloses a line protector for a communication circuit. See Abstract. Figure 1 depicts the schematic representation of the line protector. In particular, the line protector corresponds to a *first stage* including inputs (13) and (14) for connecting with an external telephone line, inherently consisting of a *tip and ring line*. See column 2, lines 56-60. The protector

also includes gas tube surge arrester (i.e. a specialized *spark gap* where electrons are emitted in a gaseous medium enclosed within a tube), the arrester corresponding to a *singular spark gap*. In addition to the gas tube surge arrester are two electrodes (28) and (30) that provide protection in the event the gas tube surge arrester fails, the two electrodes corresponding to *dual secondary spark gaps connected in parallel with said singular spark gap*. See column 2, line 66 through column 3, line 19. The remainder of the specification of Baumbach is directed toward the physical construction of the protection device, therefore, Baumbach anticipates all limitations of the claim with the exception of *a first input resistance and a second input resistance in series with said first first-stage input and said second first-stage input*, respectively; and wherein said *singular spark gap is provided across said first first-stage output and said second first-stage output*.

Elder teaches an overvoltage protection scheme for subscriber loops. See Abstract. In particular, Elder teaches an initial protection circuit (24) similar to that disclosed by Baumbach in that it is coupled across the tip and ring lines of a subscriber loop, providing protection between terminating equipment and the subscriber loop. It is noted that Elder includes current limiting resistors (25) (i.e. *resistances*) between the subscriber loop's tip and ring lines and the protection circuit. Elder indicates that these resistors (25) help dissipate excess energy when the protector (24) is clamping to limit dissipation of energy in the protectors, and also indicates that such resistors may be fuses in order to prevent damage to the protector circuit (24). See column 3, lines 18-25. It would have been obvious to one of ordinary skill in the art at the time of the

invention to include current limiting resistors arranged in the configuration as taught by Elder for the purpose of reducing the probability of damaging the protection circuit of Baumbach.

Furthermore, it is clear that the combination of Baumbach and Elder do not disclose or teach a *second stage having a first filter and a second filter*. Chandran teaches a balanced spectrum limiter for telephone and communication systems. See Abstract. As seen in figures 1 and 2, Chandran teaches providing a spectrum limiter (12) at the output of a prior art protection circuit (2) that generally relates to the combination of Baumbach and Elder in that the combination of Baumbach and Elder fails to disclose a spectrum limiter (12). Chandran teaches that the addition of the spectrum limiter (12) enables both protection from overvoltage and overcurrent conditions and reduction in noise, thus enabling one of ordinary skill in the art to utilize the telephone subscriber loop at frequencies higher than those originally intended. See column 1, line 55 through column 2, 17. In particular, figure 5 depicts a filter arrangement. Clearly, inductor (38) and capacitor (36) correspond to a *first filter*, and inductor (40) and capacitor (36) correspond to a *second filter*. One inherent advantage of high-frequency transmission over a telecommunication medium is the increase in available bandwidth. It would have been obvious to one of ordinary skill in the art at the time of the invention to couple a filter arrangement as taught by Chandran to the output of the protection circuit taught by the combination of Baumbach and Elder for the purpose of enabling one of ordinary skill in the art to transmit at frequencies beyond

those originally intended for a subscriber loop, and thus enabling greater bandwidth over preexisting communication mediums.

Claim 27 recites essentially the same subject matter as claim 21, as covered by Baumbach in view of Elder and further in view of Chandran, and is rejected for the same reasons.

Claim 22 is limited to *the telephony protection device of claim 21*, as covered by Baumbach in view of Elder and further in view of Chandran. As stated in the rejection of claim 21, Elder teaches that the current limiting resistors (25) are *fuses*. See column 3, lines 18-25. Therefore, Baumbach in view of Elder and further in view of Chandran makes obvious all limitations of the claim.

Claims 28 and 35 recite essentially the same subject matter as claim 22, as covered by Baumbach in view of Elder and further in view of Chandran, and are rejected for the same reasons.

Claim 25 is limited to *the telephony protection device of claim 21*, as covered by Baumbach in view of Elder and further in view of Chandran. Figure 1 of Baumbach clearly depicts that the *singular* (20) and *dual spark gaps* (28) and (30) are connected to *ground*. Therefore, Baumbach in view of Elder and further in view of Chandran makes obvious all limitations of the claim.

Claims 30 and 38 recite essentially the same subject matter as claim 25, as covered by Baumbach in view of Elder and further in view of Chandran, and are rejected for the same reasons.

Claim 29 is limited to the telephony protection device of claim 27, as covered by Baumbach in view of Elder and further in view of Chandran. Figure 1 of Baumbach clearly depicts that the *dual spark gap* consists of a *first* (28) and a *second* (30) *series spark gap*. Therefore, Baumbach in view of Elder and further in view of Chandran makes obvious all limitations of the claim.

Claim 34 recites essentially the same subject matter as claim 29, as covered by Baumbach in view of Elder and further in view of Chandran, and is rejected for the same reasons.

Claim 39 is limited to the telephony protection device of claim 34, as covered by Baumbach in view of Elder and further in view of Chandran. As seen in figure 5 of Chandran, two filters (13) and (34) are cascaded in series. Inductor (38) corresponds to a *tip line inductor*, capacitor (36) corresponds to a *tip line capacitor*, inductor (40) corresponds to a *ring line inductor*, and capacitor (26) corresponds to a *ring line capacitor*. Therefore, Baumbach in view of Elder and further in view of Chandran makes obvious all limitations of the claim.

2. **Claims 23, 24, 31, 32 36, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baumbach in view of Elder and Chandran and further in view of Hershfield (US Patent 4,677,518).**

Claim 23 is limited to *the telephony protection device of claim 21*, as covered by Baumbach in view of Elder and further in view of Chandran. Chandran discloses two filters (figure 4, elements 38 and 40). The inductances provide a high-impedance to high-frequency inputs such as voltages due to lightning strikes on the conductors (4)

and (8), but also provide a high-impedance to high-frequency data signals. Chandran also indicates that the filters are composed of a single core with two separate windings that correspond to the two separate inductances (38) and (40). Therefore, Baumbach in view of Elder and further in view of Chandran makes obvious all limitations of the claim with the exception *wherein said first stage further comprises a first ferrite bead in series with said first input resistance and a second ferrite bead in series with said second input resistance.*

Hershfield teaches a transient voltage suppression unit (abstract; figure 6). As seen in figure 6, a plurality of ferrite beads (114), (116), (130), and (132) are used as inductance devices in a filtering scheme for limiting transient voltage spikes that are caused by things such as lightning strikes (column 5, line 40 to column 6, line 6), the beads providing an advantage in that they do not saturate under high currents (column 6, lines 7-33). It would have been obvious to use ferrite beads instead of inductors in a transient reducing filter as taught by Hershfield because the ferrite beads do not saturate under high currents so that their inductance remains constant resulting in stable impedance to high-frequency transients, which is in accordance with the teachings of Chandran who is interested in reducing noise by providing low-pass filters for telephone equipment and requires a device with a stable impedance.

Claims 31 and 36 recite essentially the same subject matter as claim 23, as covered by Baumbach in view of Elder and further in view of Chandran, and are rejected for the same reasons.

Claim 24 is limited to *the telephony protection device of claim 21*, as covered by Baumbach in view of Elder and further in view of Chandran. It is clear that the combination of Baumbach, Elder, and Chandran discussed up to this point does not teach a *diode connected between said first first-stage output and said second first-stage output*.

As shown in the rejection of claim 23, it would have been obvious to use ferrite beads as part of or in addition to the filtering circuitry taught by Chandran as they do not saturate as normal inductors, which inherently preserves the impedance of the protection/filter circuit. Preserving the impedance is beneficial as it does not adversely affect high-frequency circuitry sharing the subscriber line with the protector. Hershfield goes further to say that a plurality of diodes (128) depicted post-filter serve to reduce the amplitude of any remaining transients and reduce the dynamic impedance of the system. See column 6, lines 27-33. It would have been obvious to one of ordinary skill in the art at the time of the invention to include a plurality of avalanche diodes at the output of the filter of the second stage as taught by Hershfield for the purpose of reducing the amplitude of any remaining transients and reducing the dynamic impedance of the system as a whole.

Claims 32 and 37 recite essentially the same subject matter as claim 24, as covered by Baumbach in view of Elder and Chandran and further in view of Hershfield, and are rejected for the same reasons.

Allowable Subject Matter

The following is a statement of reasons for the indication of allowable subject matter:

3. **Claims 26 and 33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.**

Claim 26 is limited to *the telephony protection device of claim 21*, as covered by Baumbach in view of Elder and further in view of Chandran. As seen in figures 4 and 5 of Chandran, the filter elements (13) and (34) are composed of two *inductors* and a *capacitor*. There is no indication that the *capacitor* is connected to *ground* as recited in the claim. In fact, Chandran suggests that such an unbalanced filter is disadvantageous as it is more vulnerable to noise and transients than his suggested balanced circuit. See column 2, lines 7-17. Thus, claim 26 is allowable over Baumbach in view of Elder and further in view of Chandran.

Claim 33 recites essentially the same subject matter as claim 26, and is allowable over Baumbach in view of Elder and further in view of Chandran for at least the same reasons.

Response to Arguments

Applicant's arguments with respect to claims 21-39, filed 24 November 2004, have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter F Briney III whose telephone number is 703-305-0347. The examiner can normally be reached on M-F 8am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on 703-305-4040. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

WFB
3/3/05

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